

(19)



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(11) Publication number:

0 647 945 A3

(12)

EUROPEAN PATENT APPLICATION(21) Application number: **94114186.3**(51) Int. Cl.⁶: **G11C 11/406**(22) Date of filing: **09.09.94**(30) Priority: **12.10.93 US 134928**(43) Date of publication of application:
12.04.95 Bulletin 95/15(84) Designated Contracting States:
DE FR GB IT NL(88) Date of deferred publication of the search report:
16.08.95 Bulletin 95/33

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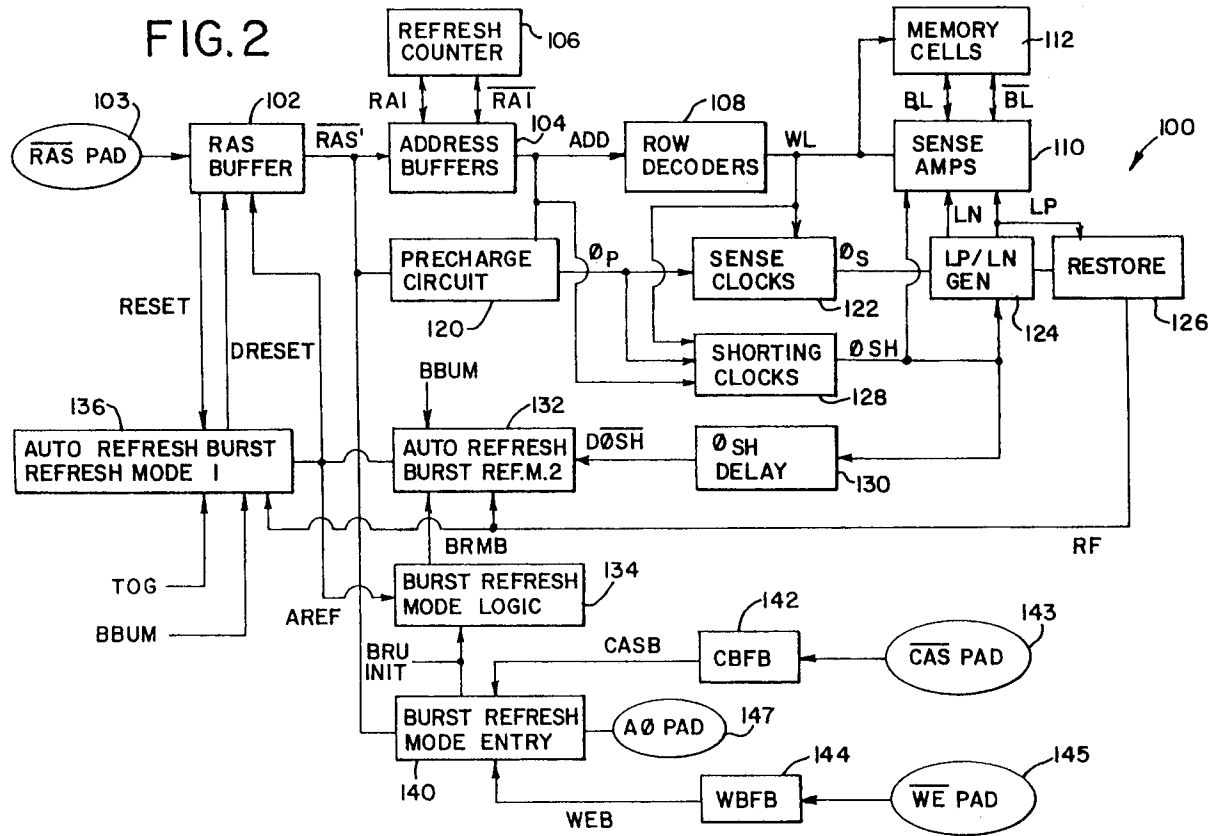
(54) **Burst refresh mode for DRAMs.**

(57) Burst refresh mode circuitry is provided for a memory (100) having cells (112) in rows and columns, sense amplifiers (110) and Latch N/Latch P driver circuitry (124), a RAS buffer (102), refresh counters (106), address buffers (104), row decoders (108), precharge circuitry (120) producing shorting clocks (128), and a refresh detector circuit coupled to the Latch P circuitry to provide a restore finished (RF) signal indicative that a refresh cycle is substantially completed. Burst refresh mode entry circuitry (140) detects proper conditions for entering burst

refresh mode. An auto-refresh burst refresh mode circuit (136) causes the RAS buffer (102) to generate a new internal RAS signal. Burst refresh mode logic (134) has counters to count the number of rows that have been refreshed. The system self-times the refreshing by responding to the restore finished signal. A delay circuit (130) interposes a short delay for the precharge before another row is automatically refreshed in the burst refresh mode. Battery back-up mode circuitry (132) is partially disabled.

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FIG. 2





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EUROPEAN SEARCH REPORT

Application Number
EP 94 11 4186

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	US-A-4 984 209 (RAJARAM ET AL.) * abstract * * column 4, line 36 - column 7, line 29; figure 3 * ---	1,11,14, 17,19	G11C11/406
A	EP-A-0 307 945 (WANG LABORATORIES INC) * abstract * * page 7, line 9 - page 7, line 56; figures 7,8 * -----	1,11,14, 17,19	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			G11C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 14 June 1995	Examiner Stecchina, A
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			